

What is claimed is:

5 1. A guide catheter, comprising:
an outer sheath comprising an open lumen and a pre-shaped distal end;
an inner sheath comprising an open lumen, the inner sheath disposed
within the open lumen of the outer sheath, the inner sheath axially rotatable and
longitudinally translatable relative to the outer sheath, a distal end of the inner
sheath conforming to a shape of the outer sheath when the inner sheath is
retracted, and the distal end of the inner sheath assuming a pre-formed shape
10 when the distal end of the inner sheath is extended beyond the distal end of the
outer sheath;

a steering tendon disposed along the outer sheath, a distal end of the
steering tendon connected to a distal tip of the outer sheath;

a guide handle connected to a proximal end of the outer sheath; and

15 a steering mechanism disposed on the guide handle, the steering
mechanism connected to a proximal end of the steering tendon and providing a
pulling force on the steering tendon to adjustably change a shape of the pre-
shaped distal end of the outer sheath.

20 2. A guide catheter according to claim 1, wherein the steering
mechanism comprises a steering handle, the steering handle pivotably
connected to the guide handle.

25 3. A guide catheter according to claim 1, wherein the outer sheath
further comprises at least one longitudinally disposed pre-stress line extending
from the proximal end to the distal tip of the outer sheath.

4. A guide catheter according to claim 1, wherein the inner sheath further comprises at least one longitudinally disposed pre-stress line extending from a proximal end to a distal tip of the inner sheath.

5 5. A guide catheter according to claim 1, further comprising:
at least one electrode on the distal end of the inner sheath; and
at least one electrical conductor coupled to the at least one electrode, the
at least one conductor disposed within the inner sheath.

10 6. A guide catheter according to claim 1, further comprising:
at least one electrode on the pre-shaped distal end of the outer sheath;
and
at least one electrical conductor coupled to the at least one electrode, the
at least one conductor disposed within the outer sheath.

15 7. A guide catheter according to claim 1, further comprising an
occlusion device connected to the distal end of the inner sheath.

20 8. A guide catheter according to claim 1, further comprising an
occlusion device connected to the pre-shaped distal end of the outer sheath.

25 9. A guide catheter according to claim 1, further comprising:
at least one pressure sensing device connected to the distal end of the
inner sheath; and
at least one electrical conductor coupled to the at least one pressure
sensing device, the at least one conductor disposed within the inner sheath.

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10. A guide catheter according to claim 1, further comprising:
at least one pressure sensing device connected to the pre-shaped distal
end of the outer sheath; and

5 at least one electrical conductor coupled to the at least one pressure
sensing device, the at least one conductor disposed within the outer sheath.

11. A guide catheter according to claim 1, wherein the pre-shaped
distal end of the outer sheath further comprises:

10 a substantially straight section at the distal tip of the outer sheath having
a length of about 1 cm to about 5 cm; and

a substantially circular curve proximally adjacent to the straight section,
the circular curve having a bend radius ranging from about 0 degrees to about
180 degrees and a bend radius ranging from about 1 cm to about 7 cm.

15 12. A guide catheter according to claim 1, wherein the pre-formed
shape of the distal end of the inner sheath further comprises:

a substantially straight section at the distal tip of the inner sheath having a
length of about 0.5 cm to about 4.0 cm; and

20 a substantially circular curve proximally adjacent to the straight section,
the circular curve having a bend radius ranging from about 0 degrees to about
150 degrees and a bend radius ranging from about 1 cm to about 5 cm.

25 13. A guide catheter according to claim 1, wherein the steering tendon
is disposed on an outer surface of the outer sheath.

14. A guide catheter according to claim 1, wherein the steering tendon
is disposed within the open lumen of the outer sheath.

15. A guide catheter according to claim 1, wherein the outer sheath further comprises a second lumen, the steering tendon disposed within the second lumen of the outer sheath.

5 16. A method of inserting a payload into the coronary sinus of a patient's heart, comprising:

providing a guide catheter, comprising:

an outer sheath comprising an open lumen and a pre-shaped distal end;

10 an inner sheath comprising an open lumen, the inner sheath disposed within the open lumen of the outer sheath, the inner sheath axially rotatable and longitudinally translatable relative to the outer sheath, a distal end of the inner sheath conforming to a shape of the outer sheath when the inner sheath is retracted, and the distal end of the inner sheath assuming a pre-formed shape when the distal end of the inner sheath is extended beyond the distal end of the outer sheath;

15 a steering tendon disposed along the outer sheath, a distal end of the steering tendon connected to a distal tip of the outer sheath;

a guide handle connected to a proximal end of the outer sheath;

20 and

a steering mechanism disposed on the guide handle, the steering mechanism connected to a proximal end of the steering tendon and providing a pulling force on the steering tendon to adjustably change a shape of the pre-shaped distal end of the outer sheath;

25 inserting a distal end of the catheter through the patient's right atrium via an access vessel;

distally extending the inner sheath from the outer sheath, the distal end of the inner sheath assuming a pre-formed shape upon extension from the distal end of the outer sheath;

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providing a pulling force on the steering tendon to adjustably change an angle of the pre-shaped distal end of the outer sheath, axially rotating the inner sheath relative to the outer sheath, and longitudinally translating the inner sheath relative to the outer sheath to direct the distal end of the inner sheath for finding and cannulating the patient's coronary sinus; and

5 advancing the payload through the open lumen of the inner sheath to insert the payload into the patient's coronary sinus.

17. A method according to claim 16, wherein the payload comprises a

10 pacing lead.

18. A method according to claim 16, further comprising injecting a contrast media for venography into the open lumen of the inner sheath after finding and cannulating the patient's coronary sinus.

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19. A method according to claim 16, wherein the outer sheath of the guide catheter further comprises at least one longitudinally displaced pre-stress line extending from the proximal end to a distal tip of the outer sheath and the method further comprises splitting the outer sheath while retracting the outer

20 sheath in a proximal direction to remove the outer sheath after inserting the payload into the patient's coronary sinus.

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20. A method of inserting a payload into the coronary sinus of a patient's heart, comprising:

providing a guide catheter, comprising:

an outer sheath comprising an open lumen and a pre-shaped distal

an inner sheath comprising an open lumen, the inner sheath disposed within the open lumen of the outer sheath, the inner sheath axially rotatable and longitudinally translatable relative to the outer sheath, a distal end of the inner sheath conforming to a shape of the outer sheath when the inner sheath is retracted, and the distal end of the inner sheath assuming a pre-formed shape when the distal end of the inner sheath is extended beyond the distal end of the outer sheath;

a steering tendon disposed along the outer sheath, a distal end of the steering tendon connected to a distal tip of the outer sheath;

a guide handle connected to a proximal end of the outer sheath;
and

a steering mechanism disposed on the guide handle, the steering mechanism connected to a proximal end of the steering tendon and providing a pulling force on the steering tendon to adjustably change a shape of the pre-shaped distal end of the outer sheath;

inserting a distal end of the catheter through the patient's right atrium via an access vessel;

distally extending the inner sheath from the outer sheath, the distal end of the inner sheath assuming a pre-formed shape upon extension from the distal end of the outer sheath;

providing a pulling force on the steering tendon to adjustably change an angle of the pre-shaped distal end of the outer sheath, axially rotating the inner sheath relative to the outer sheath, and longitudinally translating the inner sheath

relative to the outer sheath to direct the distal end of the inner sheath for finding and cannulating the patient's coronary sinus;

distally advancing the outer sheath over the inner sheath to seat the outer sheath in the coronary sinus;

5 proximately retracting the inner sheath to remove the inner sheath from the outer sheath; and

advancing the payload through the open lumen of the outer sheath to insert the payload into the patient's coronary sinus.

10 21. A method according to claim 20, wherein the payload comprises a pacing lead.

15 22. A method according to claim 20, further comprising injecting a contrast media for venography into the open lumen of the inner sheath after finding and cannulating the patient's coronary sinus.

20 23. A method according to claim 20, wherein the outer sheath of the guide catheter further comprises at least one longitudinally displaced pre-stress line extending from the proximal end to a distal tip of the outer sheath and the method further comprises splitting the outer sheath while retracting the outer sheath in a proximal direction to remove the outer sheath after inserting the payload into the patient's coronary sinus.

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